UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,207	01/22/2002	Francois Kermarec	920569-905833	4665

23644 7590 09/16/2008

BARNES & THORNBURG LLP
P.O. BOX 2786
CHICAGO, IL 60690-2786

EXAMINER	
AVELLINO, JOSEPH E	
ART UNIT	**PAPER NUMBER**
2146	

NOTIFICATION DATE	DELIVERY MODE
09/16/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patent-ch@btlaw.com

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/054,207
Filing Date: January 22, 2002
Appellant(s): KERMAREC ET AL.

William M. Lee, Jr.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 23, 2008 appealing from the Office action mailed March 19, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

NEW GROUND(S) OF REJECTION

Claim 20 is rejected under 35 USC 103(a) as being unpatentable over Jain in view of Walker in view of Goodwin. This rejection is being made to correct a typographical error in the heading of the rejection under 35 USC 103(a) made in the Final rejection which states that claims 21-25, 30, 31, and 49-54 were rejected. Claim 20 should have been included in this rejection as well.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 6765914 B1	Jain; Vipin Kumar et al.	2004-04
US 6944159 B1	Fotedar; Shivi et al.	2005-09
US 6701375 B1	Walker; W. Clinton et al.	2004-03
US 20020124107 A1	Goodwin, Michele	2002-09

"Official Notice" is taken that both the concept and advantages of providing for no more than two CE interfaces is well known and expected in the art as interpreted in claim 30. Appellant has failed to seasonably traverse this assertion and therefore is to be taken as admitted prior art.

"Official Notice" is taken that both the concept and advantages of providing Ethernet interfaces is well known and expected in the art as interpreted in claim 31. Appellant has failed to seasonably traverse this assertion and therefore is to be taken as admitted prior art

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 20-25, 30, 31, and 49-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jain et al. (USPN 6,765,914) (hereinafter Jain) in view of Walker et al. (USPN 6,701,375) (hereinafter Walker) in view of Goodwin (US 2002/0124107).

1. Referring to claim 20, Jain discloses a method of providing a VPN service through a shared network infrastructure comprising a purality of interconnected provider edge (i.e. switches 120, 130, 140) having customer edge (i.e. hosts coupled via switch ports 123-125, 133-135, 143-145)) interfaces, wherein some of the CE interfaces are allocated to a VPN supporting a plurality of VLANs and are arranged for exchanging tagged data frames (i.e. tagged with VLAN-ID) with CE devices respectfully connected to the PE devices through said CE interfaces, the method comprising the following steps:

receiving at least one tagged frame from a CE device (i.e. receive a packet with VLAN ID) at each CE interface (i.e. switch port) allocated to said VPN, (Figure 4, VLANs 401, 402, and 403 have respective identifiers identifying the VLANs).

detecting whether a pair of CE interfaces allocated to said VPN and belonging to two PE devices correspond to a common VLAN identifier (i.e. determining whether a source address and a destination address correspond to the same VLAN) (col. 5 line 43 to col. 6, line 27); and

in response to such detection, establishing a connection (an inherent feature, otherwise the packet cannot be transferred between the PE devices) in the shared infrastructure between said two PE devices 120, 130 for forwarding the frame including said common VLAN identifier (i.e. forwarding the packet to the switch's bus connecting port, which receives the packet, and forwards the packet to the appropriate host) (col. 6, lines 1-10).

Jain does not disclose the connection is a virtual circuit in the shared network infrastructure between said two PE devices for forwarding frames including said VLAN ID, rather if a VLAN ID is not found, the packet is forwarded to all local switch ports and all other switches (col. 6, lines 1-28). In analogous art, Walker discloses another method of providing VPN services through a shared network infrastructure which discloses determining a routing to a destination CE (i.e. second host) device by issuing flooding address resolution requests (i.e. broadcast) to all other PE devices to determine where the destination device is, and then establishes a virtual circuit between the two PE devices (col. 2, line 51 to col. 3, line 15). It would have been obvious to one of ordinary skill in the art to combine the teaching of Jain with Walker in order to provide an efficient method of transferring packets, by creating a virtual circuit which efficiently and transparently transfers packets between devices, resulting in a more efficient use of bandwidth, which Jain acknowledges is a problem with the flooding of the packet (Jain: col. 6, lines 25-28 “even at the expense of bus bandwidth”).

Jain-Walker does not explicitly disclose the switch/router automatically learns the correspondence between the CE device and the VLAN identifier. In analogous art, Goodwin discloses another VLAN communication scheme wherein a switch will flood an unknown source MAC address to other switches such that the switches will learn the VLAN membership of the MAC address (¶ 20-22). It would have been obvious to one of ordinary skill in the art to substitute the VLAN formation system of Jain-Walker with the VLAN learning system of Goodwin in order to realize the benefits of Goodwin to the system of Jain-Walker, specifically by reducing the manual assignments needed to

configure the switches for correct routing of the packets. By using Goodwin, the switches automatically learn the VLAN membership of each of the client devices, thereby saving precious man-hours over the prior art approach.

2. Referring to claim 21, Jain-Walker discloses establishing a respective flooding virtual circuit in the shared network infrastructure between each pair of PE devices having at least CE interface allocated to said VPN (i.e. broadcasting) (Walker: col. 2, lines 60-65).

in response to reception of a first tagged frame including a VLAN identifier at a first CE interface, propagating said first tagged frame on each flooding VC established from the first PE device (col. 2, lines 60-65);

in response to reception of the first aged frame on a flooding VC at another PE device, propagating a frame to each CE device (col. 7, lines 10-20).

3. Referring to claim 22, Jain-Walker discloses the correspondence between the first CE interface and the VLAN identifier is learnt in response to the reception of the first tagged frame including said VLAN identifier at the first CE interface (i.e. learning the routing and destination of a particular address for a connection) (Walker: col. 6, lines 20-35).

4. Referring to claim 23, Jain-Walker discloses allocating, at the first PE device, a first virtual circuit resource for said VPN and the VLAN identifier (i.e. source/destination

pairing) included in the tagged frame (i.e. creates a virtual circuit) (Walker: col. 6, lines 35-45);

transmitting a first signaling message from the first PE device to each other PE device having at least one CE interface indicating the first virtual circuit resource (i.e. circuit) and VLAN identifier (Walker: col. 6, lines 38-63

in response to reception of the first signaling message at east other PE device, storing an identification of the first virtual circuit resource in association with said VPN and VLAN identifier (Walker: col. 6, lines 38-63).

5. Referring to claim 24, Walker discloses transmitting a second signaling message from said other PE device to the first PE device thereby completing establishment of a VC, defined by the first and second VC resource (col. 6, lines 38-63).

6. Referring to claim 25, Walker discloses two VC's are used to forward data in two directions ("used to establish a static route back to the host") (col. 6, lines 50-57).

7. Referring to claim 30, Jain-Walker disclose the invention as described in the claims above, however do not specifically limit the amount of CE devices to two or less. However Walker does show that only one CPE device (i.e. Host) is connected to an edge node (i.e. router) (Figure 1). This would motivate one of ordinary skill in the art to put any arbitrary number of nodes on a PE device. By this rationale, "Official Notice" is taken that both the concept and advantages of providing for no more than two CE

interfaces is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to modify the teaching of Jain-Walker to provide no more than two CE devices in order to provide adequate service to the customer, without requiring numerous connections to various devices.

8. Referring to claim 31, Jain-Walker disclose the invention substantively as described in claim 20, however do not specifically disclose that the CE interfaces are Ethernet interfaces, however Ethernet is well known in the networking art for interacting with VPNs. By this rationale, "Official Notice" is taken that both the concept and advantages of providing Ethernet interfaces is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to modify the teaching to include Ethernet in order to include various different networking interfaces, thereby allowing more computers to be connected to the network.

9. Claims 49-54 are rejected for similar reasons as stated above.

Claims 26, 27, 32, 33, and 55-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jain in view of Walker in view of Goodwin as applied above, in view of Fotedar et al. (USPN 6,944,159) (hereinafter Fotedar).

10. Referring to claims 26 and 27, Jain-Walker discloses the invention substantively as described in claim 24. Jain-Walker do not specifically disclose the use of MPLS

labels and signaling messages for transferring MPLS labels. In analogous art, Fotedar discloses another VPN service provision system which discloses disturbing MPLS labels and VLAN ids (e.g. abstract). It would have been obvious to one of ordinary skill in the art to combine the teaching of Fotedar with Jain-Walker in order to provide transparent connectivity between an nodes in a network as supported by Fotedar (col. 1, lines 30-45).

11. Claims 32, 33, and 55-58 are rejected for similar reasons as stated above.

(10) Response to Argument

Appellant's arguments (Brief, pages 4-7) have been fully considered and are refuted below.

Appellant argues, in substance, that neither Jain nor Walker do not disclose detecting whether a pair of CE interfaces allocated to the VPN and belonging to to PE devices correspond to a common VLAN identifier, and establishing the VC in a shared network infrastructure for forwarding frames including said common VLAN identifier as stated in claim 20 (Brief, pages 4-5). The Examiner disagrees. As stated in the Final Rejection, Appellant continues to argue the references individually. It is the *combination* of Jain *in view of* Walker which teach the limitations in question. As stated above, Figure 7 and col. 5, line 31 to col. 6, line 27 teach forwarding a packet through a

plurality of switches. Jain teaches receiving a packet corresponding to a VLAN ID. The system will then search through the MAC addresses associated with that VLAN in order to find the appropriate destination identified in the VLAN ID tagged packet (i.e. the VLAN has a list of MAC addresses it knows is associated with the VLAN, and will then search through this list to see if the MAC address in the received packet corresponds to any of the MAC addresses it knows are part of the VLAN; thereby determining that both the source address and destination addresses correspond to the same VLAN). If the packet does not belong to any of the local ports (i.e. is not directly connected to this switch, rather is a CE device connected to another switch), it will then flood the packet to every other switch, which will then repeat the steps above. This requires considerable bandwidth, as noticed by Jain (col. 6, lines 25-27: “The packet will be forwarded to its destination local port even at the expense of bus bandwidth.”

Walker discloses a method which discloses a method of sending packets that, when a source router receives a request to send a packet from one of its CE devices, will broadcast the request to find the destination of the packet. The router which handles communications for the destination recognizes this request and responds with the correct address for the particular destination. The source router, now knowing the full destination address of the destination host, will establish a virtual circuit between the sending host and the receiving host in order to transfer the packet from the source to the destination host (see Walker: abstract; Figures 2-3; col. 6, lines 36-57). These virtual circuits are "deactivated" after a period of inactivity (i.e. a timeout), and, until this time, remaining packets and responses are sent over this virtual circuit (Walker: Figure

2, ref. 44). This inherently shows that once a packet is received from the sender, the router checks to see if a virtual circuit has been established, and if so, then send the packet over the virtual circuit; if not, then the routine of Figure 2 is conducted. This broadcast packet is sent over an auxiliary channel, thereby not reducing bandwidth capacity in the network (Walker: abstract).

It would have been obvious to one of ordinary skill in the art to combine the teaching of Jain's packet distribution system with Walker's establishment of a virtual circuit in response to not knowing the destination address in order to conserve bandwidth, which was discussed as a problem in Jain and solved by Walker. This combination would facilitate bandwidth conservation by permitting VLAN members the ability to create virtual circuits if they are not established to transfer packets between one another. One of ordinary skill in the art would clearly have the ability to utilize the VLAN MAC address list of Jain and the virtual circuit establishment/sending subsequent packets over the same virtual circuit as described in Walker in order to meet the claimed limitations. By this rationale, Jain-Walker *together* clearly demonstrate the determination steps and the establishment step and therefore the rejection should be maintained.

Appellant argues, in substance, that Goodwin does not disclose learning the correspondence between a CE device and a VLAN, rather this information is located within the switch from the beginning (i.e. via manual input) (Brief, page 6). The Examiner disagrees. Appellant's attention is directed to ¶'s 15, 17 and 26 which states

that VLAN membership can be learned within the switch using a function called "source learning" which apply to VLAN policies during processing of all unknown frames. The router maintains a "source learning" related database. This information stored is found out source learning policies and observed traffic. VAP can then take information learned from this functionality and then distribute it to the other switches. In this way VAP is considered a separate function than the source learning. One of ordinary skill in the art ource learning learns the VLAN information from all unknown packets, not just packets originating from WAN side of the switch, rather would learn the correspondences from the LAN side as well (i.e. switch 1 102 would learn the VLAN correspondences from endstations 108-112 using the "source learning" function of the switch. This clearly demonstrates that Goodwin learns the correspondences between CE devices and VLANs and therefore the rejection should be maintained.

Appellant fails to provide any substantive argument with respect to the rejections under Jain-Walker-Goodwin in view of Fotedar. Therefore the Examiner does not feel it necessary to address this rejection and the Board is respectfully referred to the points above. By this rationale, the rejection should be maintained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Joseph E. Avellino/

Primary Examiner, Art Unit 2146

Conferees:

/Jeffrey Pwu/

Supervisory Patent Examiner, Art Unit 2146

/John Follansbee/

Supervisory Patent Examiner, Art Unit 2151